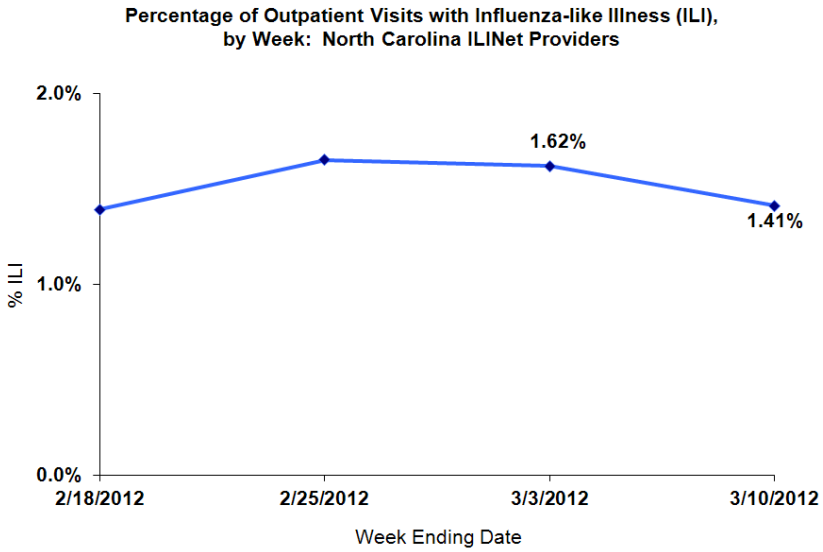
NORTH CAROLINA WEEKLY INFLUENZA SURVEILLANCE SUMMARY #23
2011–12 INFLUENZA SEASON
WEEK 10: ENDING MARCH 10, 2012

Statewide Updates

- The geographic spread of flu was SPORADIC for week ending 3/10/12.
- ILI activity reported from ED visits has not changed, but ILI activity reported by outpatient facilities slightly decreased during week 10.
- One adult flu-associated death occurred during week 10.
- Of the 17 samples submitted to the State Laboratory of Public Health (SLPH) for viral testing nine were positive for influenza during the past week.



- Hospital-based Public Health Epidemiologists (PHEs) reported 20 positive influenza results for week ending 3/10/12: 14 influenza A (not subtyped); and 6 influenza 2009 A/H1.

Regional Updates

- The overall percentage of visits due to ILI reported through ILINet for Region 4 (Southeastern US) was 1.8% for week 8 (ending 2/25/12). The current percentage of ILI seen in Region 4 is below the baseline of 2.3%.
- The proportion of outpatient visits due to ILI was at or above baseline for two of ten regions in the US during week ending 3/3/12. Region 5 includes Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin. Region 7 is located in the central region of the US and includes Iowa, Kansas, Missouri, and Nebraska.

National Updates

- The proportion of outpatient visits due to ILI nationally was 1.9% for week 9 (ending 3/3/12). The national baseline for ILI is 2.4%.
- As requested by CDC, NC DPH and other state health departments have taken measures to enhance virologic surveillance for swine-origin triple reassortant influenza A(H3N2)v viruses. No influenza A(H3N2)v viruses have been detected since December 2011.

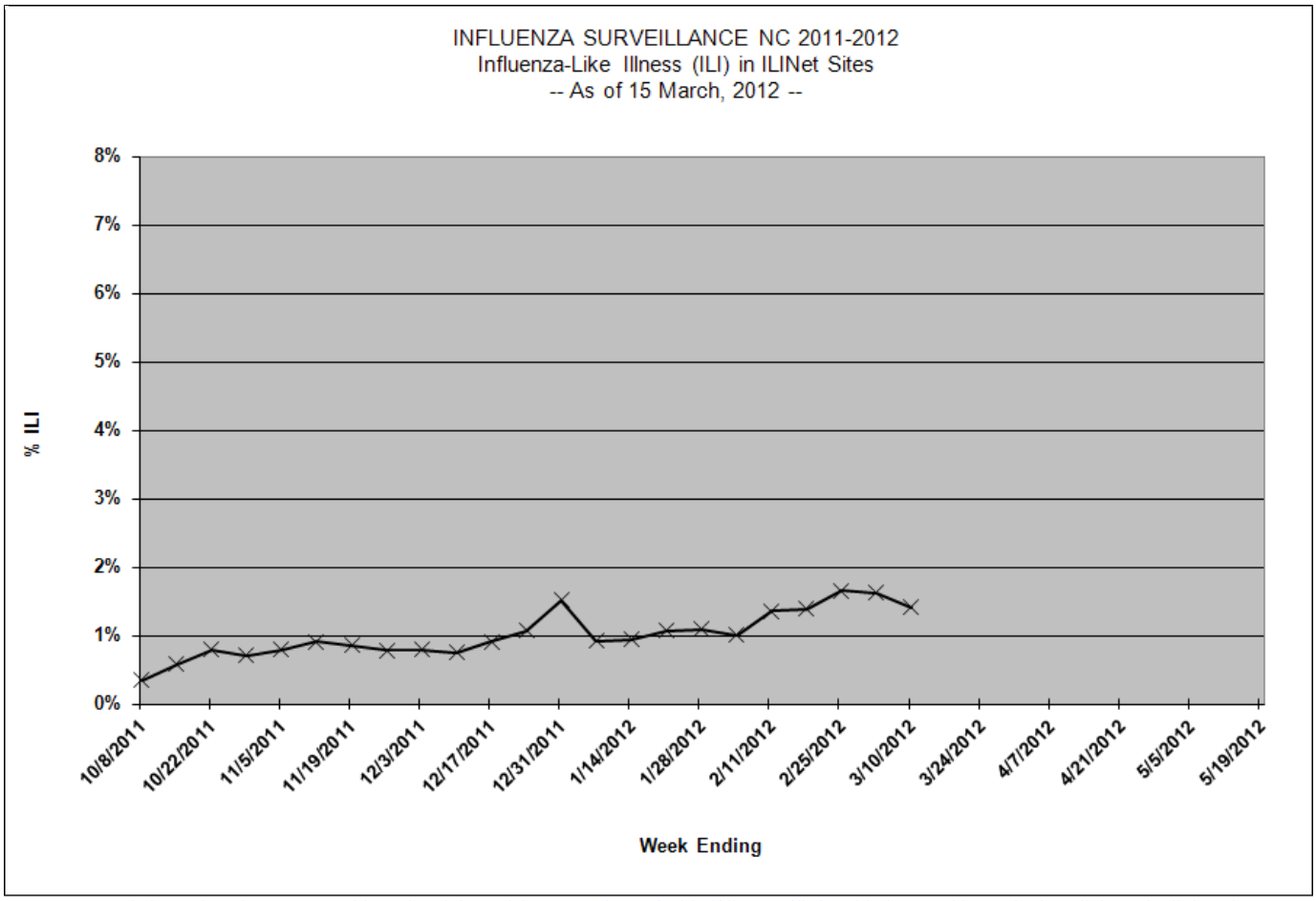
International Updates

- **From WHO Influenza Update – March 2, 2012:** Influenza activity in the temperate regions of the northern hemisphere is low but increasing in North America and most of Europe. A few countries of southern Europe appear to have now peaked along with the countries of northern Africa and the Middle East. Countries in the tropical zone reported low levels of influenza activity. Influenza activity in the temperate countries of the southern hemisphere is at inter-seasonal levels.
- While most of the viruses characterized early this season were antigenically related viruses in the current trivalent vaccine, the vaccine strain selection committee in a meeting held on 20 - 24 February noted that there is evidence of increasing antigenic and genetic drift in circulating influenza A(H3N2) recently and that the proportion of type B viruses that are from the Yamagata lineage of type B has been increasing relative to the Victoria lineage. The committee therefore recommended a change in the composition of the next northern hemisphere vaccine formulation to include an A/Victoria/361/2011 (H3N2)-like virus and a B/Wisconsin/1/2010-like virus of the Yamagata lineage, and continuing the inclusion of an A/California/7/2009 (H1N1)pdm09-like virus.

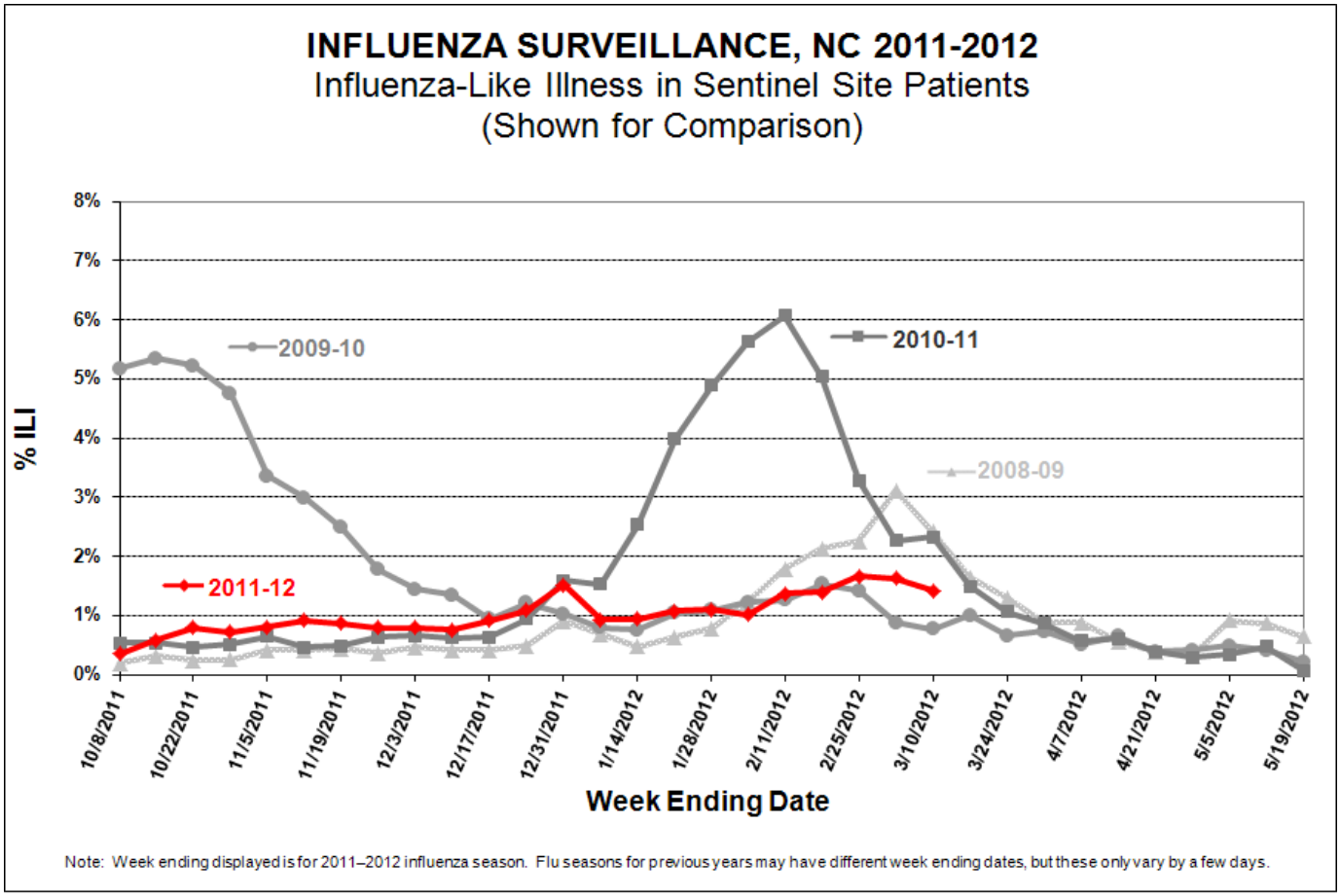
Flu Information and Guidance	
North Carolina www.flu.nc.gov	CDC http://www.cdc.gov/flu

INFLUENZA-LIKE ILLNESSES REPORTED BY SENTINEL SITES, 2011-12

Week # - Ending	(Sentinels Reporting)	# ILI	# Patients	% ILI
#40 - 10/08/11 [2011-2012]	(52)	64	18,251	0.35%
#41 - 10/15/11	(56)	110	18,837	0.58%
#42 - 10/22/11	(63)	162	20,404	0.79%
#43 - 10/29/11	(66)	164	22,801	0.71%
#44 - 11/05/11	(68)	178	22,311	0.79%
#45 - 11/12/11	(69)	201	22,080	0.91%
#46 - 11/19/11	(67)	193	22,332	0.86%
#47 - 11/26/11	(65)	103	13,108	0.78%
#48 - 12/03/11	(70)	170	21,365	0.79%
#49 - 12/10/11	(65)	147	19,544	0.75%
#50 - 12/17/11	(66)	166	18,108	0.91%
#51 - 12/24/11	(58)	129	11,945	1.07%
#52 - 12/31/11	(61)	149	9,795	1.52%
#1 - 01/07/12	(65)	134	14,415	0.92%
#2 - 01/14/12	(64)	184	19,560	0.94%
#3 - 01/21/12	(66)	195	18,115	1.07%
#4 - 01/28/12	(63)	215	19,572	1.09%
#5 - 02/04/12	(67)	235	23,079	1.01%
#6 - 02/11/12	(66)	293	21,474	1.36%
#7 - 02/18/12	(62)	275	19,717	1.39%
#8 - 02/25/12	(59)	328	19,772	1.65%
#9 - 03/03/12	(57)	317	19,493	1.62%
#10 - 03/10/12	(41)	155	10,934	1.41%



For more information about comparable national data, visit www.cdc.gov/ncidod/diseases/flu/weekly.htm and in particular, click on the link "View Chart Data" below "Percentage of Visits for Influenza-like Illness Reported by the US Outpatient Influenza-like Illness Surveillance Network (ILINet)".

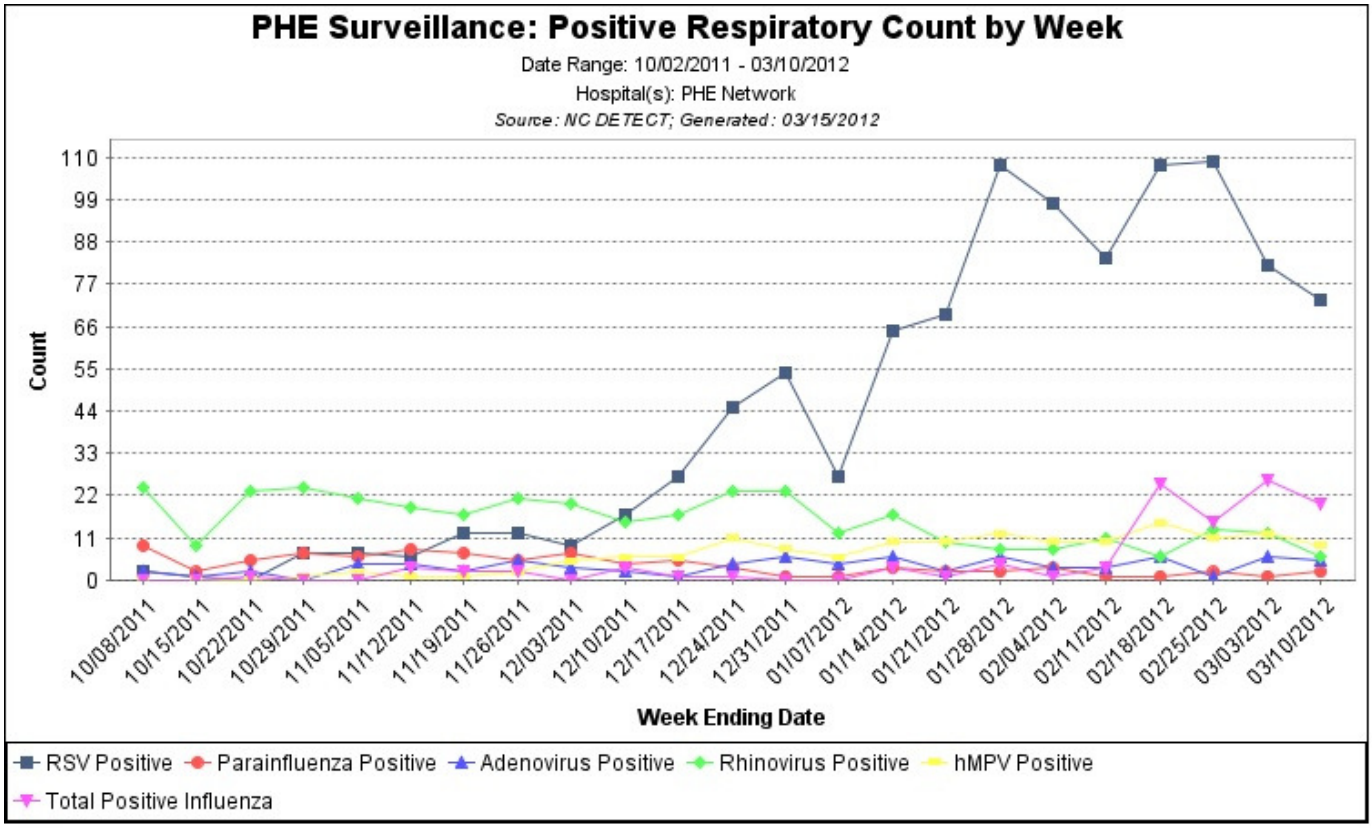


Note: Week ending displayed is for 2011–2012 influenza season. Flu seasons for previous years may have different week ending dates, but these only vary by a few days.

PHE Respiratory Viral Pathogen Surveillance

Positive test results for selected respiratory viruses are reported on a weekly basis by Public Health Epidemiologists (PHEs) located in ten of the largest hospital networks across North Carolina. The graph below shows the number of positive tests for respiratory syncytial virus (RSV), parainfluenza, adenovirus, rhinovirus, and human metapneumovirus (hMPV) by week beginning with the week ending 10/8/2011.

These data provide a useful indication of which other respiratory viruses are circulating and possibly contributing to ILI in the state. Please note that the total number of tests performed is not available from all hospital networks, so the overall proportion testing positive cannot be calculated. Also, testing protocols and practices differ among the hospitals. Finally, these numbers reflect test results from participating hospitals only and might not be reflective of the entire state.



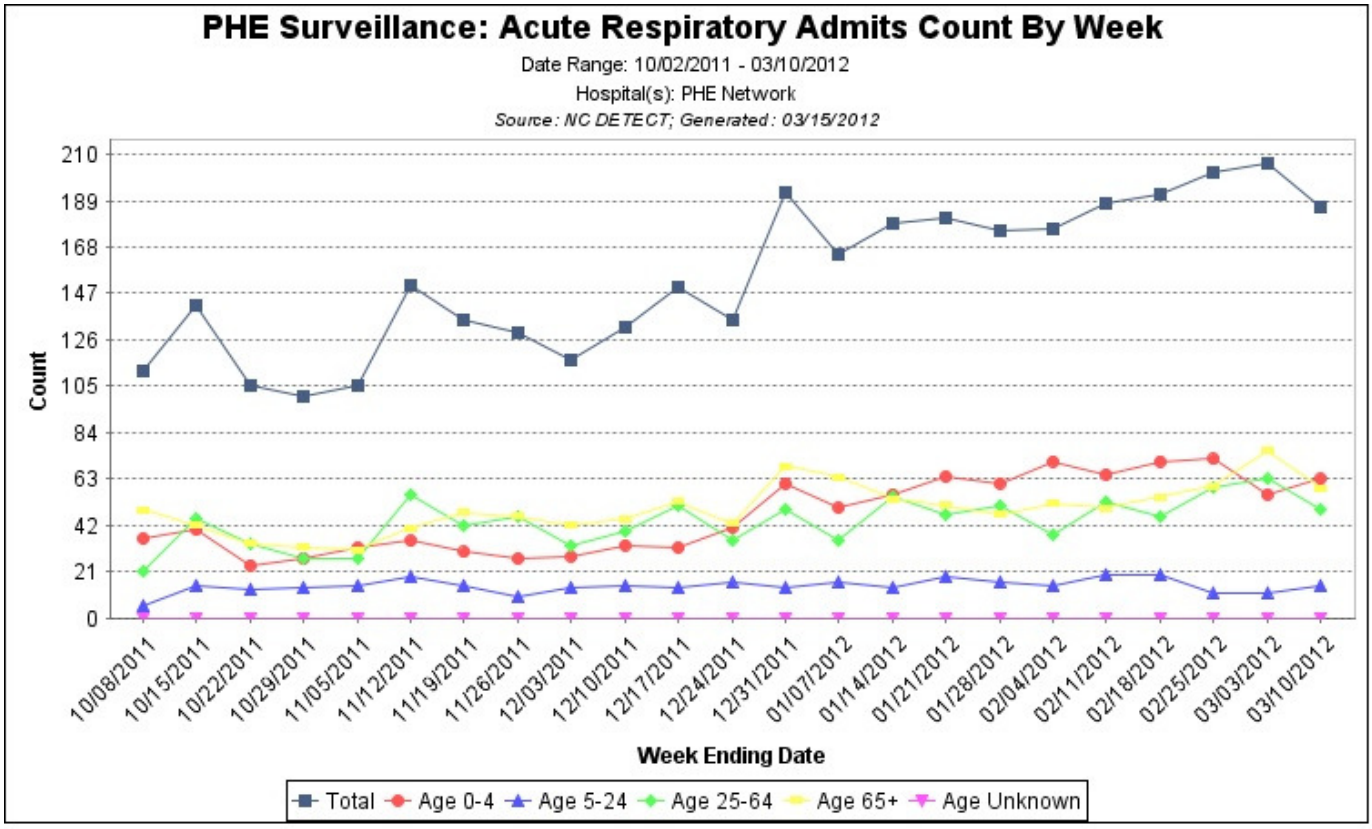
- PHEs reported 20 positive influenza results for week ending 3/10/12: 14 influenza A (not subtyped); and 6 influenza 2009 A/H1. All positives were tested by rapid test, viral culture, direct fluorescent-antibody staining (DFA), or PCR.

- Respiratory syncytial virus (RSV) and influenza were the most frequently identified respiratory viral pathogens.

PHE Acute Respiratory Admissions Surveillance

The number of patients admitted to the hospital with fever plus respiratory symptoms in the absence of a known cause other than influenza is reported on a weekly basis by Public Health Epidemiologists (PHEs) located in ten of the largest hospital networks across North Carolina. The graph below shows the number of acute respiratory illness admissions to participating hospitals by age group.

In conjunction with other surveillance information, these data help us monitor for changes in severity of illness during periods when influenza is circulating. Please note that these reports are not limited to patients with laboratory-confirmed influenza infection. Also, these numbers reflect admissions to participating hospitals only and might not be reflective of the entire state.



- Acute respiratory admissions decreased during week 10 (ending 3/10/12).
- The highest number of acute respiratory admissions was reported among patients age 0-4 years for week 10.

Virologic Surveillance Information from the North Carolina State Laboratory of Public Health

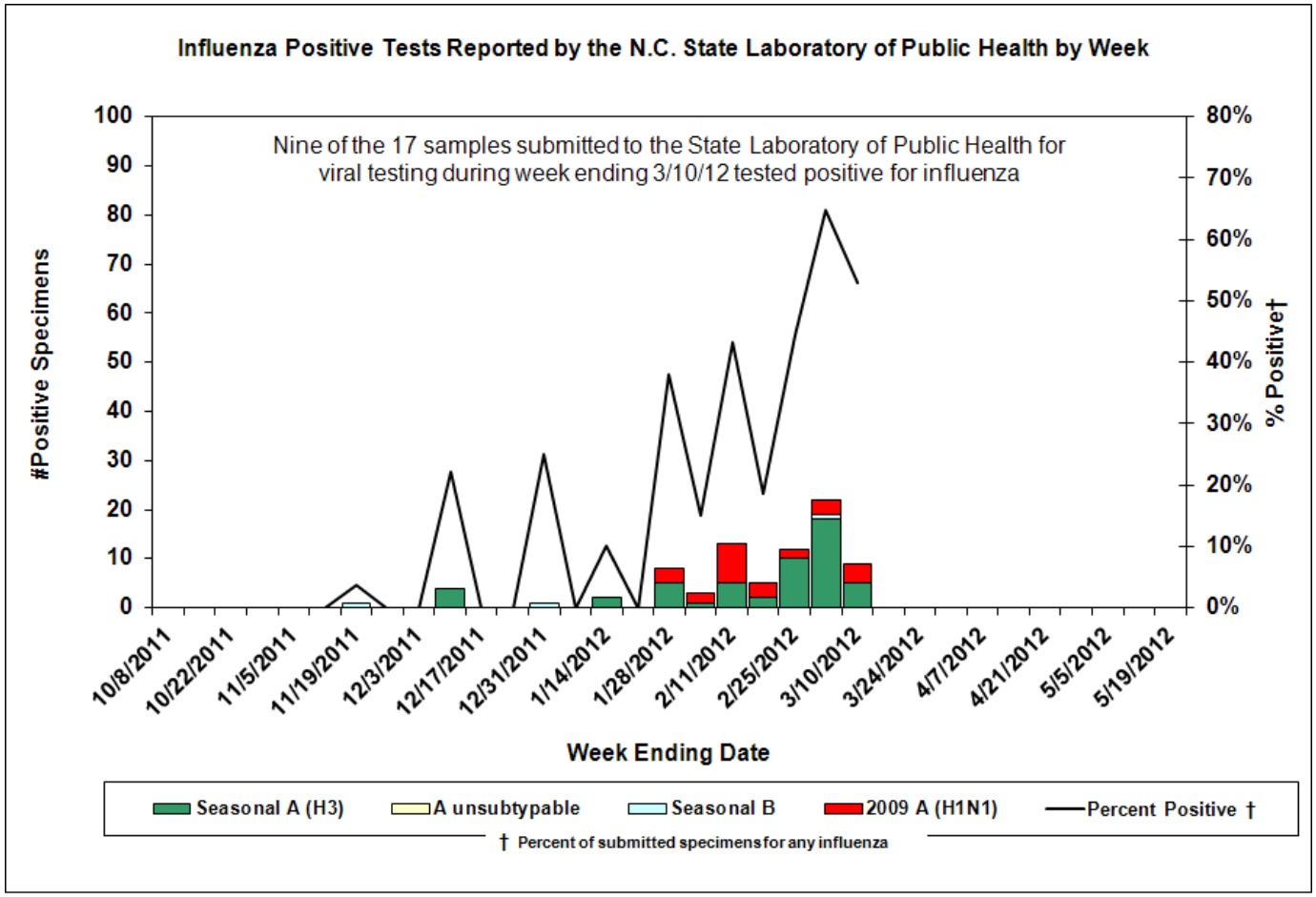
INFLUENZA VIRUS ISOLATES FROM IN-STATE PATIENTS IDENTIFIED BY THE STATE LABORATORY OF PUBLIC HEALTH 2011–2012 SEASON*

Virus Type	# New Positive Results (03/04/12–03/10/12)	# Cumulative Positive Results (10/02/11-03/10/12)
A	0	0
2009 A(H1N1)	4	25
A/H3	5	52
B	0	3
Total	9	80

* 2011-2012 influenza season began October 2, 2011

NOTE: This table only includes isolates tested as of 3/9/12.

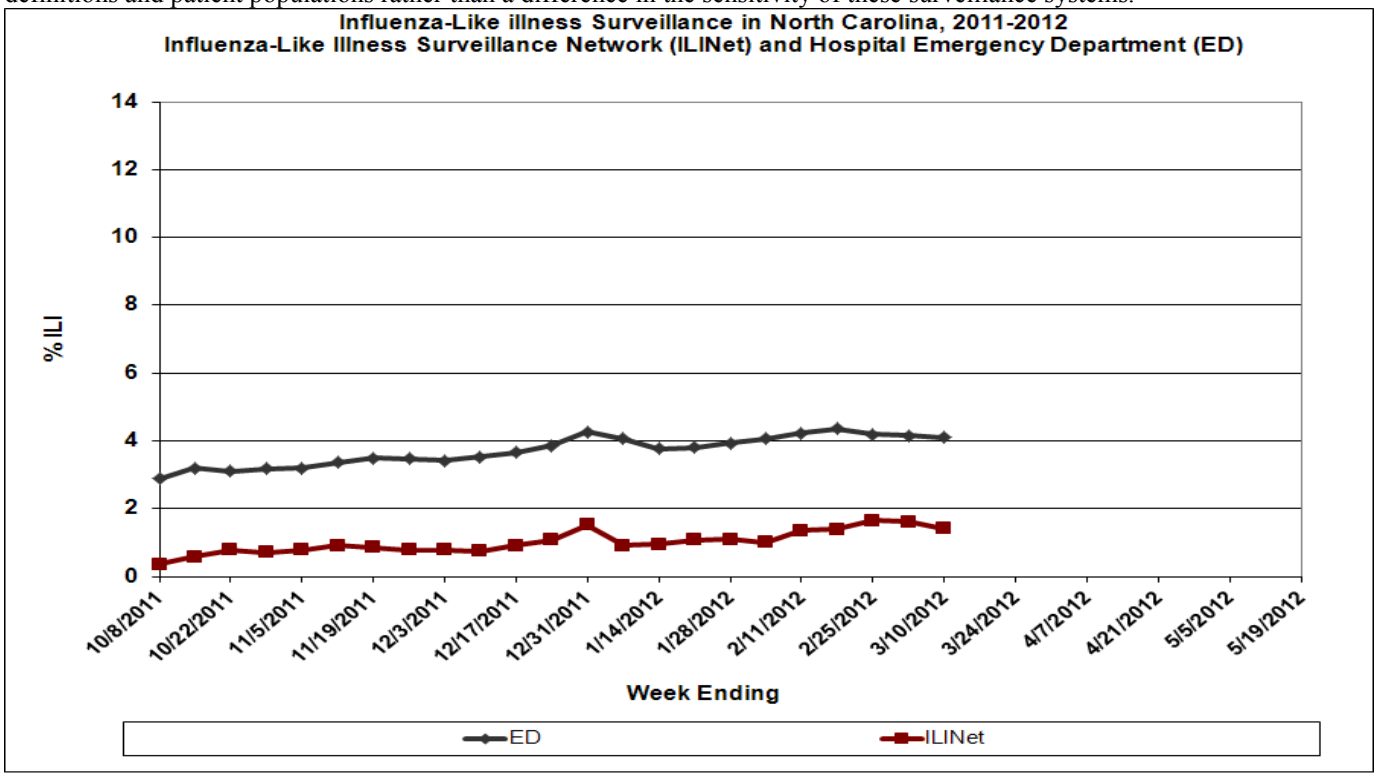
This table does not include influenza isolates identified by other laboratories.



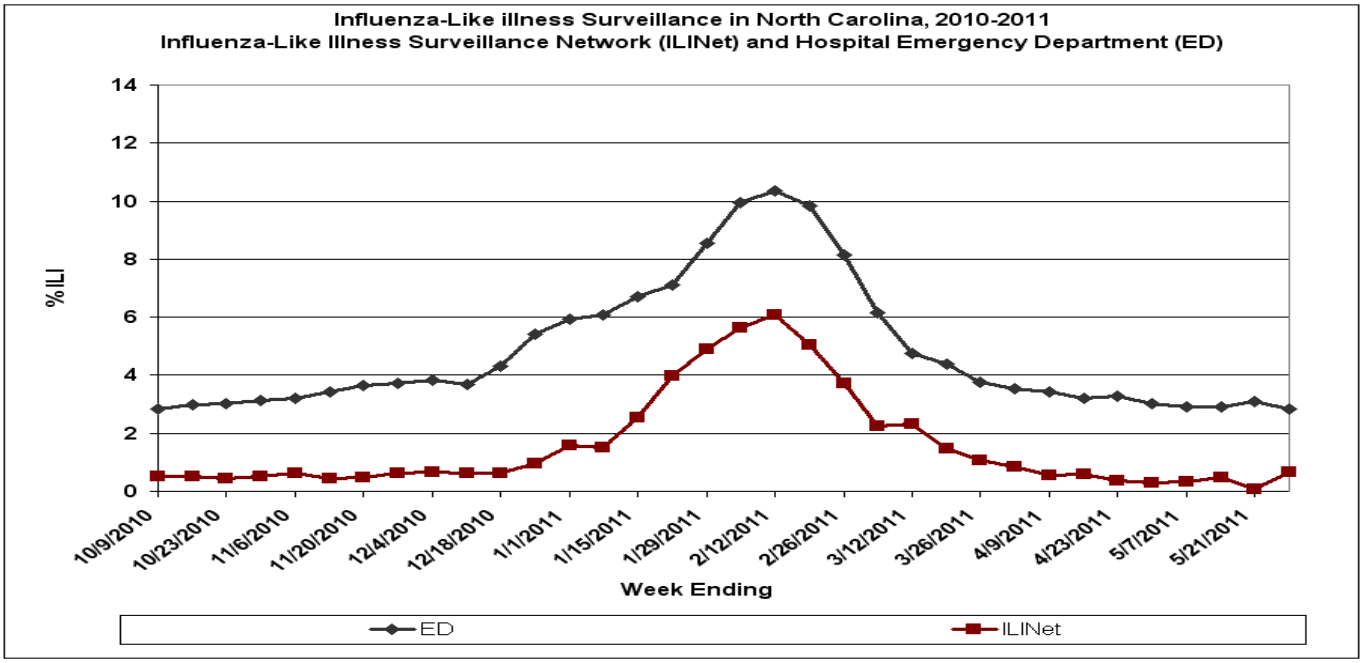
North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT)
ILI Surveillance

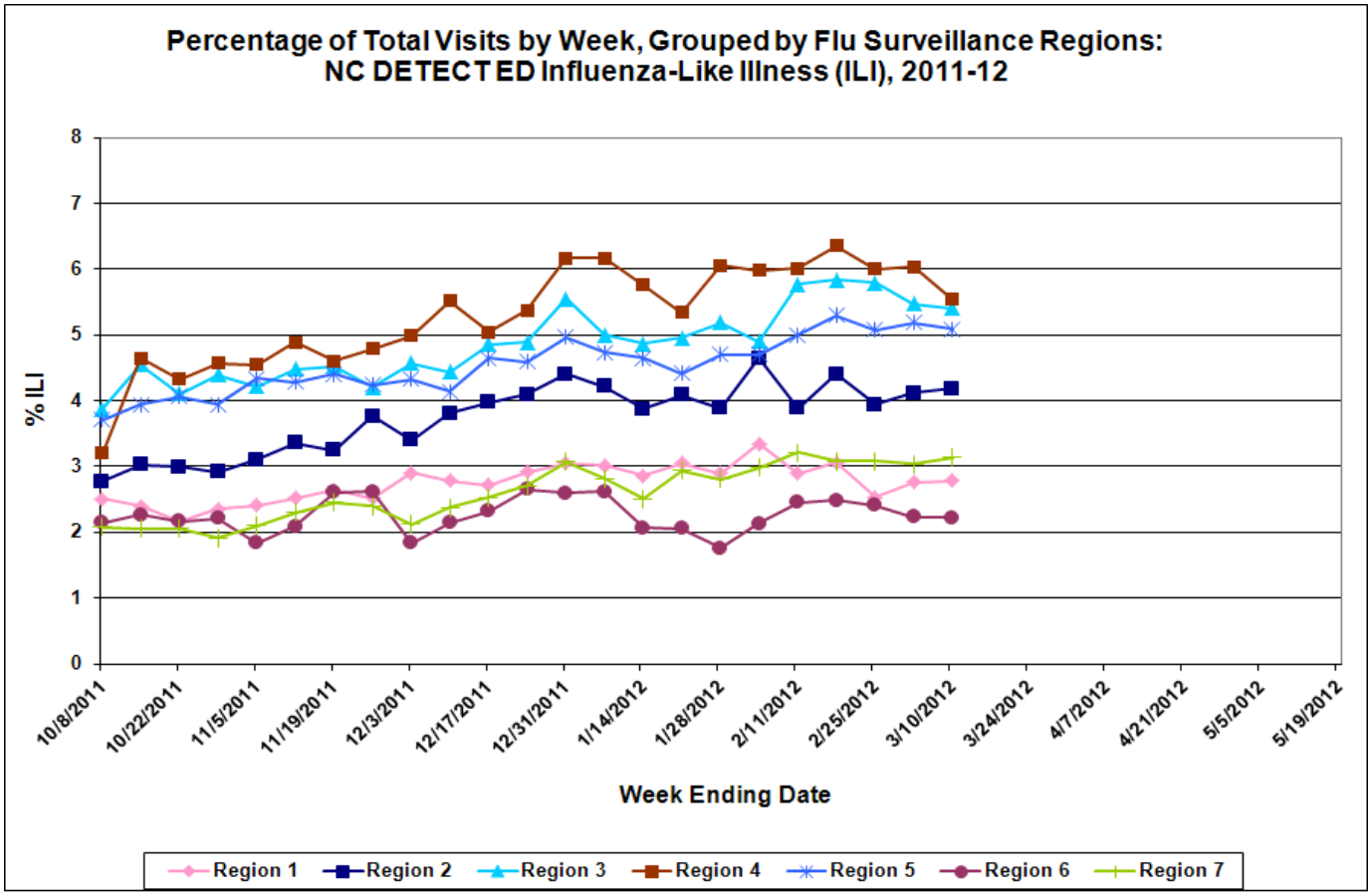
Near real-time syndromic surveillance for ILI is conducted through the North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT). This system uses a variety of data sources including emergency departments (EDs). NC DETECT is currently receiving data daily from 113 of the 115 24/7 EDs in North Carolina. For the purposes of surveillance, ED visits are grouped into syndromes based on analyses of the chief complaint, initial ED temperature (when available), and history of present illness (when available). The NC DETECT ILI syndrome case definition includes any case with the term "flu" or "influenza", or at least one fever term and one influenza-related symptom. Because these data are submitted and updated twice a day, they are particularly useful for real-time monitoring and for early detection of outbreaks.

The proportion of ED visits meeting the ILI syndrome definition is monitored throughout the year and compared to data obtained from Influenza-like Illness Surveillance Network (ILINet). In past years, data from the two systems have shown similar trends (below). The higher proportion of ILI seen in NC DETECT compared to ILINet reflects differences in the case definitions and patient populations rather than a difference in the sensitivity of these surveillance systems.

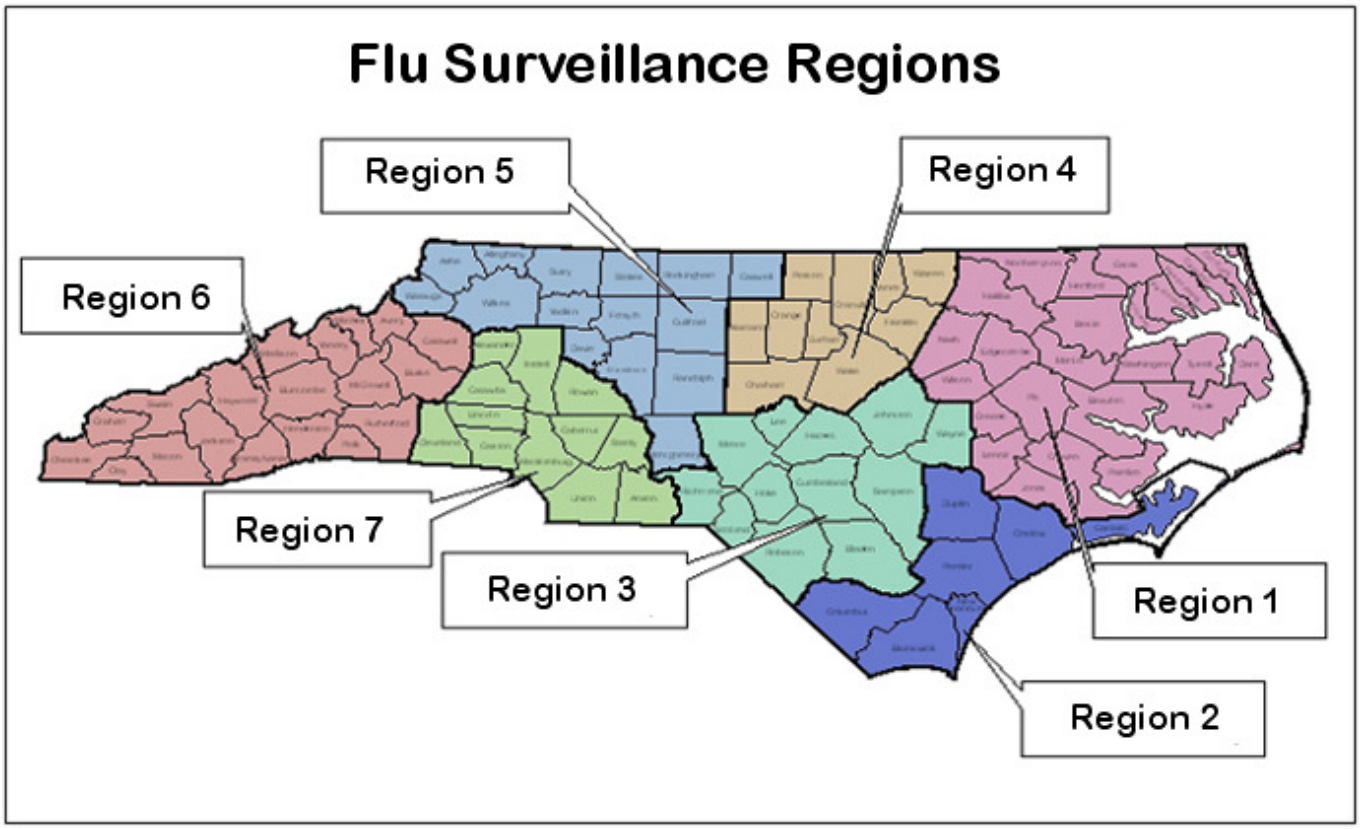


2010-2011 Influenza Season: Shown For Comparison



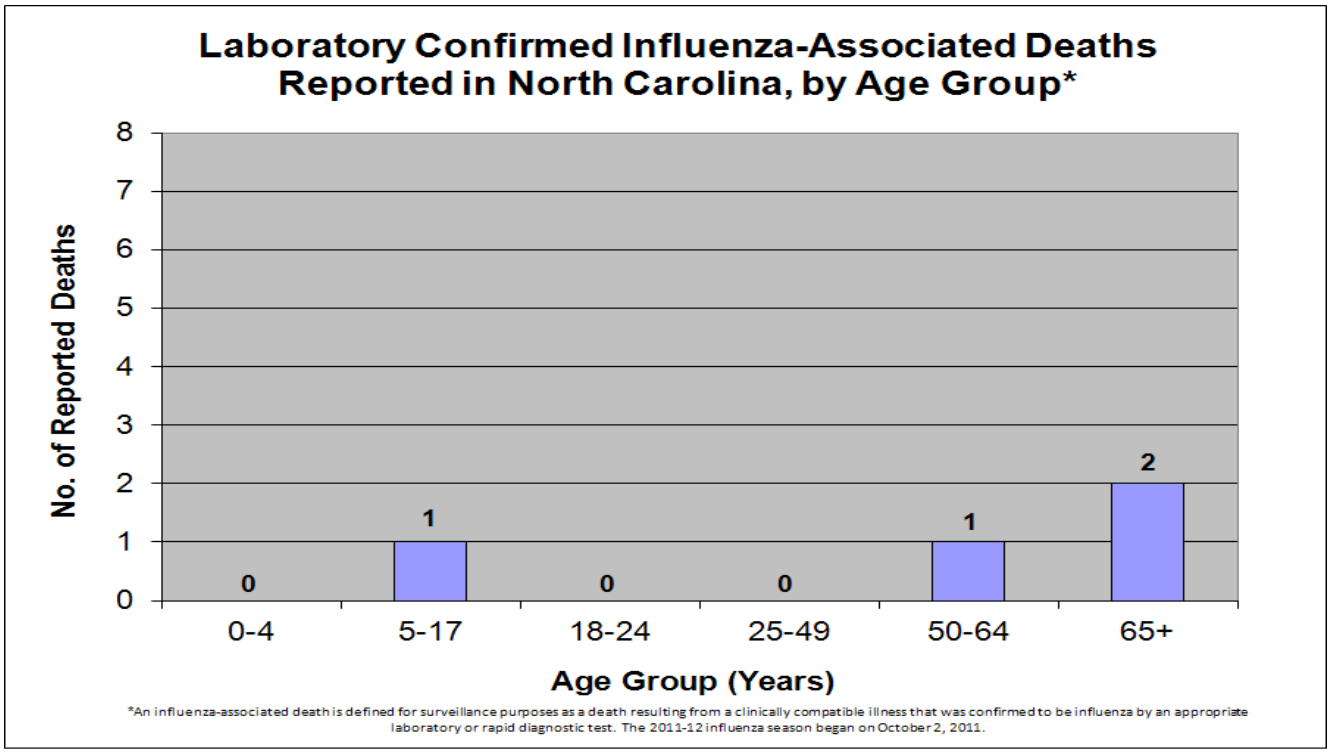


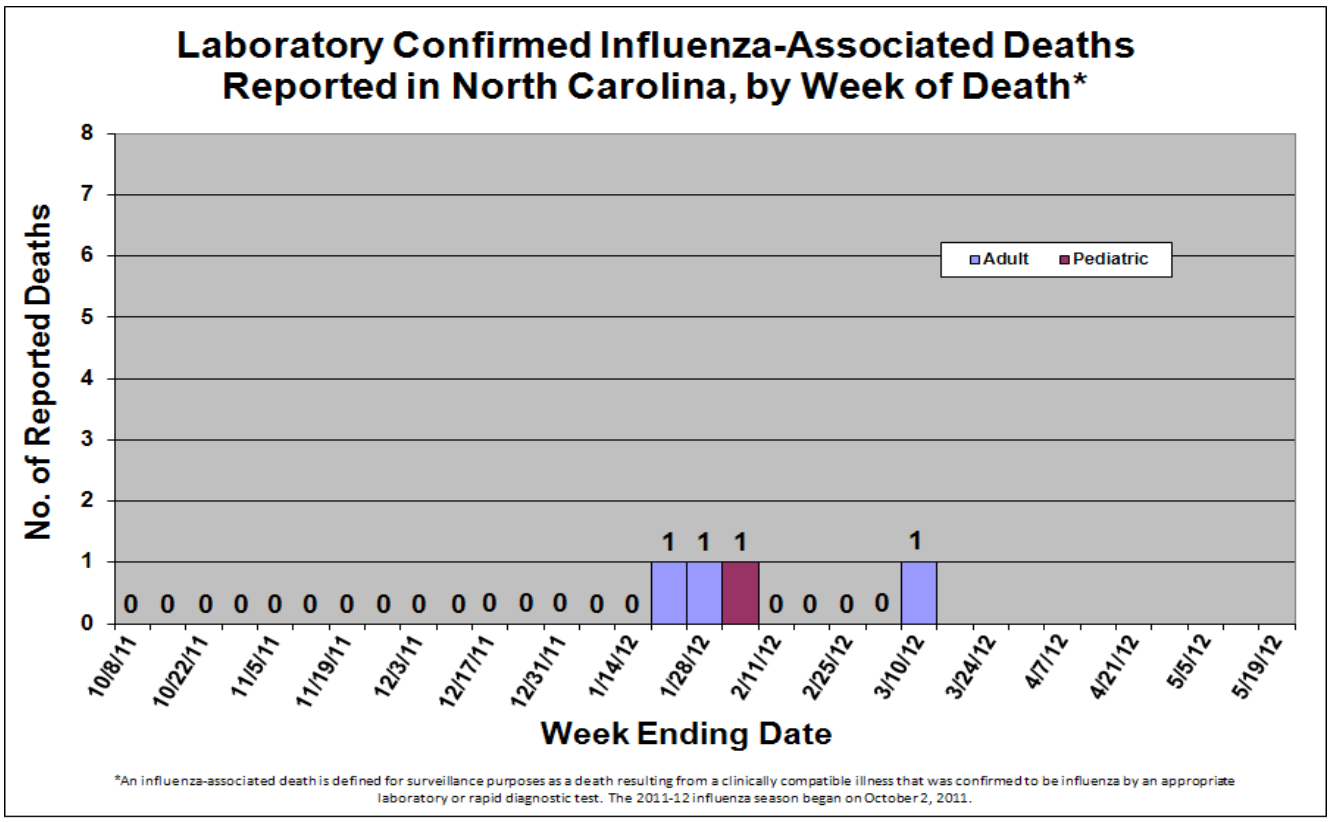
NOTE: This graph begins with data starting on October 2, 2011 – the first day of the 2011–2012 influenza season.



NC Influenza-Associated Deaths*	
Influenza-Associated Deaths 03/04/12–03/10/12	**Total Influenza-Associated Deaths Since Week 40 (ending 10/08/11)**
1	**4**

***Influenza-associated Deaths** - This number is based on reports submitted by providers to the North Carolina Division of Public Health. An influenza-associated death is defined for surveillance purposes as a death (adult or pediatric) resulting from a clinically compatible illness that was confirmed to be influenza by an appropriate laboratory or rapid diagnostic test with no period of complete recovery between the illness and death.





PARTICIPANTS IN NORTH CAROLINA'S INFLUENZA SENTINEL SURVEILLANCE PROGRAM THAT HAVE REPORTED DATA TO CDC

LOCAL HEALTH DEPARTMENT/DISTRICT OFFICES [29]:

Alamance County Health Department (Burlington)
Cabarrus County Health Department (Kannapolis)
Caldwell County Health Department (Lenoir)
Chatham County Health Department (Siler City)
Duplin County Health Department (Kenansville)
Franklin County Health Department (Louisburg)
Greene County Health Department (Snow Hill)
Henderson County Health Department (Hendersonville)
Johnston County Health Department (Smithfield)
Jones County Health Department (Trenton)
Lee County Health Department (Sanford)
Martin County Office [Martin-Tyrrell-Washington County Health District] (Williamston)
Montgomery County Health Department (Troy)
Northampton County Health Department (Jackson)
Pender County Health Department (Burgaw)
Pitt County Health Department (Greenville)
Richmond County Health Department (Rockingham)
Rockingham County Health Department (Wentworth)
Stanly County Health Department (Albemarle)
Stokes County Health Department (Danbury)
Surry County Health Department (Dobson)
Tyrrell County Office [Martin-Tyrrell-Washington County Health District] (Columbia)
Union County Health Department (Monroe)
Wake County Health Department, Children's Clinic (Raleigh)
Washington County [Martin-Tyrell-Washington County Health District] (Plymouth)
Watauga County Office [Appalachian Health District] (Boone)
Wilkes County Health Department (Wilkesboro)
Wilson County Health Department (Wilson)
Yancey County Office [Toe River Health District] (Burnsville)

COLLEGES AND UNIVERSITIES STUDENT HEALTH PROGRAMS [17]:

Appalachian State University Student Health Services (Boone; Watauga Co.)
Davidson College Student Health Center (Davidson; Mecklenburg Co.)
Duke University Student Health Services (Durham; Durham Co.)
ECU Student Health Services (Greenville; Pitt Co.)
Elizabeth City State University Student Health Services (Elizabeth City; Pasquotank Co.)
Elon University R. N. Ellington Health and Counseling Center (Elon; Alamance Co.)
Fayetteville State University (Fayetteville; Cumberland Co.)
Mount Olive College Milton M. Lownes Jr., MD Student Health Services (Mount Olive; Wayne Co.)
NC Agricultural &Technical State University Student Health Services (Greensboro; Guilford Co.)
NC State University Student Health Services (Raleigh; Wake Co.)
UNC-Asheville Student Health Services (Asheville; Buncombe Co.)
UNC-Chapel Hill Student Health Services (Chapel Hill; Orange Co.)
UNC-Charlotte Student Health Services (Charlotte, Mecklenburg Co.)
UNC-Greensboro Student Health Services (Greensboro; Guilford Co.)
UNC-Pembroke Student Health Services (Pembroke; Robeson Co.)
Wake Forest University Student Health Services (Winston-Salem; Forsyth Co.)
Winston-Salem State University (Winston-Salem; Forsyth Co.)

PRIVATE PRACTITIONERS [31]:

Bakersville Community Medical Center (Bakersville; Mitchell Co.)
Blue Cross and Blue Shield of N.C. (Durham; Durham Co.)
Blue Ridge Community Health Services (Hendersonville; Henderson Co.)
Butner-Creedmoor Family Medicine (Creedmore; Granville Co.)
Cabarrus Urgent Care (Concord; Cabarrus Co.)
Carolina East Medical Associates (Washington; Beaufort Co.)
Colerain Primary Care (Colerain; Bertie Co.)
ECU Brody School of Medicine – Department of Pediatrics (Greenville; Pitt Co.)
Family Care Center (Taylorsville; Alexander Co.)
Gaston Family Health Services (Gastonia; Gaston Co.)
Haywood Pediatric and Adolescent Medicine Group, PA (Clyde; Haywood Co.)
Hot Springs Health Program (Marshall; Madison Co.)
Matthews Children's Clinic (Matthews; Mecklenburg Co.)
MEDAC Health Services at Shipyard Blvd. (Wilmington; New Hanover Co.)
MEDAC Health Services at Porter's Neck (Wilmington; New Hanover Co.)
MEDAC Health Services at Military Cutoff (Wilmington; New Hanover Co.)
MinuteClinic Belmont (Belmont; Gaston Co.)
MinuteClinic Mooresville (Mooresville; Iredell Co.)
MinuteClinic Waxhaw (Waxhaw; Union Co.)
Murfreesboro Primary Care (Murfreesboro; Hertford Co.)
Oxford Family Physicians (Oxford; Granville Co.)
PrimeCare (Winston-Salem; Forsyth Co.)
PrimeCare of Kernersville (Kernersville; Forsyth Co.)
PrimeCare of Northpoint (Winston-Salem; Forsyth Co.)
Roanoke Chowan Community Health Center (Ahoskie; Hertford Co.)
SAS Institute Health Care Center (Cary; Wake Co.)
Sisters of Mercy Urgent Care, North Center (Weaverville; Buncombe Co.)
Sisters of Mercy Urgent Care, South (Asheville; Buncombe Co.)
Sisters of Mercy Urgent Care, West (Asheville; Buncombe Co.)
Stanly Family Care Clinic (Albemarle; Stanly Co.)
Steven C. Hill, MD, PC (Spruce Pine; Mitchell Co.)

HOSPITALS [4]:

Blue Ridge Regional Hospital (Spruce Pine; Mitchell Co.)
Cape Fear Valley Health System Primary Care Practices (Fayetteville; Cumberland Co.)
Durham VAMC (Durham; Durham Co.)
Seymour Johnson Air Force Base Medical Group (Goldsboro; Wayne Co.)

OTHER [1]:

PotashCorp (Aurora; Beaufort Co.)

TOTAL SENTINELS ENROLLED – 82

Counties covered (50): Alamance (2), Alexander, Beaufort (2), Bertie, Buncombe (4), Cabarrus (2), Caldwell, Chatham, Cumberland (2), Duplin (2), Durham (3), Forsyth (4), Franklin, Gaston (2), Granville (2), Greene, Guilford (2), Haywood, Henderson (2), Hertford (2), Iredell, Johnston, Jones, Lee, Madison, Martin, Mecklenburg (3), Mitchell (3), Montgomery, New Hanover (3), Northampton, Orange, Pasquotank, Pender, Pitt (3), Richmond, Robeson, Rockingham, Stanly (2), Stokes, Surry, Tyrrell, Union (2), Wake (3), Washington, Watauga (2), Wayne (2), Wilkes, Wilson, Yancey